

DETECTOR FOR SHORT WAVE FIBER OPTIC COMMUNICATIONS WITH COMPENSATION TO REDUCE DETECTOR JITTER

Abstract of the Disclosure

5 A detector is provided for short wave fiber optic communication
having compensation to reduce detector jitter. The detector includes a
photodetector providing a modulated current. A transimpedance amplifier is
coupled to the photodetector receiving the modulated current and providing
an output voltage signal. An output buffer is coupled to the transimpedance
10 amplifier receiving the output voltage signal. The output buffer includes a
differential transistor pair; a pair of source degeneration resistors connected
to the differential transistor pair; and a capacitor coupled between
connections of the differential transistor pair and the source degeneration
resistors. The value of the capacitor coupled between connections of the
15 differential transistor pair and the source degeneration resistors is selected
to reduce jitter. The capacitor passes high slew rate transimpedance
amplifier output voltage signals more readily than low slew rate
transimpedance amplifier output voltage signals. The effect of the capacitor
is to bypass the gain limiting effects of the source degeneration resistors. As
20 a result the differential transistor pair accentuates high slew rates over lower
ones so that detector jitter is reduced.